Center Innovation Fund: GSFC CIF

X-ray Optics for Wide Field-of-View X-ray Imaging

Completed Technology Project (2013 - 2015)

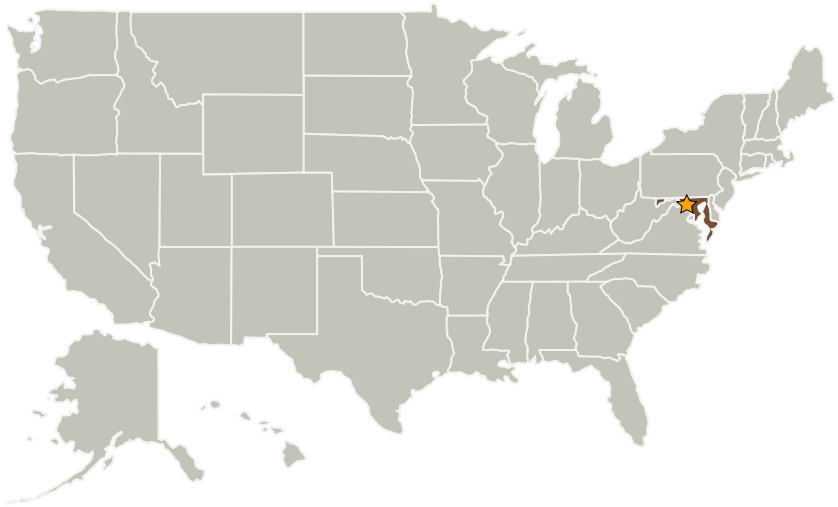
Project Introduction

To globally image the magnetospheric interaction region, we need a wide field of view x-ray imager. However, because of the small critical reflectance angle for traditional x-ray optics, most x-ray telescopes have a very narrow field-of-view. At the University of Leicester and Photonis, a wide field of view optic has been developed using spherically slumping square pore microchannel (SMPR) plates. This makes a wide field of view, focusing x-ray optic. We propose here to develop similar wide field of view x-ray optics using techniques developed at GSFC. The goal is to produce higher throughput optics (~50% higher) for future missions. The science case for such a wide field of view soft x-ray mission is compelling: it would provide the first global, dynamic, imaging of the Earth's (and other solar system bodies) interaction with the solar wind. This is extremely important to Astrophysics, Heliophysics, and Solar System Exploration.

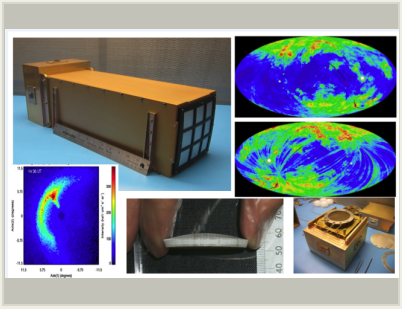
Anticipated Benefits

N/A

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland



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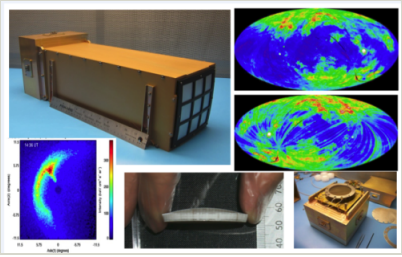
Primary U.S. Work Locations

Maryland

Images



X-ray Optics for Wide Field-of-View X-ray Imaging
X-ray Optics for Wide Field-of-View X-ray Imaging
(https://techport.nasa.gov/image/4083)

Links

GSC-16717-1
(no url provided)

Project Website:

https://www.facebook.com/NASA.GSFC

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Innovation Fund: GSFC CIF

Project Management

Program Director:

Michael R Lapointe

Program Manager:

Peter M Hughes

Project Manager:

Stanley D Hunter

Principal Investigator:

Frederick S Porter

Co-Investigators:

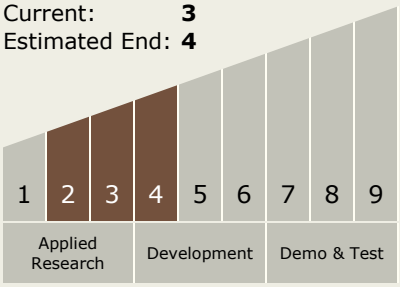
Paul S Rozmarynowski
James A Chervenak
David G Sibeck
George Manos
Michael Collier
Jose O Santos

X-ray Optics for Wide Field-of-View X-ray Imaging

Completed Technology Project (2013 - 2015)

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **4**



Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.4 Manufacturing
    - TX12.4.3 Electronics and Optics Manufacturing Process